

IN THE CLAIMS:

1. (Amended) A method for assessing the performance of a hearing aid that includes an implanted hearing aid actuator, comprising:

positioning a test device external to a patient having ~~the~~an implanted hearing aid that includes an actuator, wherein the test device is separate from said hearing aid;

utilizing said test device to generate at least one predetermined test signal that is provided by the test device to said hearing aid and to obtain at least one measure of a magnetic field generated by the actuator in response to ~~a~~a resultant electrical signal passing through the actuator; and,

employing the at least one magnetic field measure to assess the performance of the actuator.

2. (Amended) The method of Claim 1 wherein the employing step, includes:

comparing the at least one magnetic field measure to a first predetermined range to assess a first performance parameter, said first performance parameter being one of the operability of the hearing aid and an interface between the actuator and a component of an auditory system of the patient.

3. (Original) The method of Claim 2 comprising:

providing an output indicative of whether the at least one magnetic field measure is within the first predetermined range.

4. (Amended) The method of Claim 2 wherein the employing step includes:

comparing the at least one magnetic field measure to a second predetermined range to assess a second performance parameter, said second performance parameter being the other one of the operability of the hearing aid and an interface between the actuator and a component of an

auditory system of the patient, wherein the second predetermined range is at least partially non-overlapping with the first predetermined range.

5. (Original) The method of Claim 4 comprising:

providing an output indicative of whether the at least one magnetic field measure is within the second predetermined range.

6. Cancelled

7. (Amended) The method of Claim 62, wherein the at least one predetermined test signal has a frequency within a predetermined range of a resonant frequency of the actuator.

8. (Amended) The method of Claim 61, wherein the utilizing step includes:

selectively interconnecting the test device to an external transmitter of the hearing aid;

transmitting the at least one predetermined test signal from the test device to the external transmitter; and

inductively coupling the at least one test signal between ~~an~~the external transmitter and a subcutaneous coil of the hearing aid; ~~wherein the subcutaneous coil provides the electrical signal to the actuator.~~

9. (Amended) The method of Claim 61, wherein the utilizing step includes:

transmitting the at least one predetermined test signal to a speaker located external to the patient, wherein that least one predetermined signal is acoustically provided by the speaker.

~~providing the at least one test signal to an implanted microphone, wherein the implanted microphone provides the electrical signal to the actuator.~~

10-15. Cancelled

16. (Amended) The method of Claim 1, wherein the positioning step includes:

obtaining a first measurement of the magnetic field at a first location;

obtaining a second measurement of the magnetic field at a second location;  
providing an output indicative of the first and second measurements of the magnetic field; and

using the output to determine a desired position of the test device.

17. (Amended) The method of Claim 1, wherein the step of utilizing includes:  
providing a plurality of predetermined test signals ~~for use in generating to cause a~~  
corresponding plurality of electrical signals ~~passing to pass~~ through the actuator, wherein the  
plurality of predetermined test signals ~~includes~~ are at a corresponding plurality of different  
frequencies distributed across a predetermined frequency range.

18. (Amended) The method of Claim 17, wherein the utilizing step includes:  
using the test device to obtain a plurality of magnetic field measures corresponding to the  
plurality of electrical signals passing through the actuator.

19. (Amended) The method of Claim 18, wherein the employing step includes:  
identifying a resonant frequency of the actuator using the plurality of magnetic field  
measures.

20. (Amended) A ~~device~~ system for assessing the performance of a hearing aid that  
includes an implanted hearing aid actuator, comprising:

a test device, separate from and positionable external to a patient having an implanted  
hearing aid with an actuator, including:

a signal generator to ~~output~~ generate at least one test signal at a predetermined  
frequency, ~~that generates~~ wherein said hearing aid passes an electrical signal  
passing through the implanted hearing aid actuator in response to said test signal;  
and

a measurement device to measure a magnetic field generated by the implanted hearing aid actuator in response to the electrical signal to generate at least one test measure of the electrical signal; and

a signal processing unit to process [the reference signal and] the at least one test measure to assess at least one performance parameter of the implanted hearing aid.

21. (Amended) The ~~device~~system of Claim 20, wherein the signal processing unit is configured to compare the at least one test measure to a first predetermined range to assess a first performance parameter, said first performance parameter being one of the operability of the hearing aid and an interface between the actuator and a component of an auditory system of the patient.

22. (Amended) The ~~device~~system of Claim 21, comprising:  
a user interface to provide an output from the signal processing unit indicative of whether the at least one magnetic field measure is within the first predetermined range.

23. (Amended) The ~~device~~system of Claim 22 wherein the signal processing unit is configured to compare the at least one test measure to a second predetermined range to assess a second performance parameter, said second performance parameter being the other one of said first performance parameter being one of the operability of the hearing aid and an interface between the actuator and a component of an auditory system of the patient, wherein the second predetermined range is at least partially non-overlapping with the first predetermined range.

24. (Amended) The ~~device~~system of Claim 23, wherein the user interface is configured to provide a second output from the signal processing unit indicative of whether the at least one test measure is within the second predetermined range.

25. (Amended) The ~~device~~system of Claim 20, wherein the at least one test signal

has a frequency within a predetermined range of a resonant frequency of the actuator.

26. (Amended) The ~~device~~system of Claim 20, wherein the signal generator is configured to provide a plurality of predetermined test signals for use in generating a corresponding plurality of electrical signals passing through the actuator, wherein the plurality of predetermined test signals ~~include~~are at a corresponding plurality of different frequencies distributed across a predetermined frequency range.

27. (Amended) The ~~device~~system of Claim 26, wherein the measurement device is configured to measure a plurality of magnetic field measures corresponding to the plurality of electrical signals passing through the actuator.

28-30. Cancelled

31. (Amended) The ~~device~~system of Claim 20, wherein the signal generator comprises:

an oscillator for generating the at least one test signal;

a test control processor to set the oscillator to generate the at least one test signal; and

a reference transmitter to provide the at least one test signal to ~~the actuator~~one of a speaker and an external transmitter of the hearing aid.

32. (Amended) The ~~device~~system of Claim 20 wherein the measurement device comprises:

a pair of coils for measuring the magnetic field generated by the actuator.

33. (Amended) The ~~device~~system of Claim 20 wherein the actuator comprises:  
an electrodynamic transducer that includes a vibratory member to stimulate the component of the auditory system.

34. (New) A method for assessing the performance of a hearing aid that includes an

implanted hearing aid actuator comprising:

positioning a test device external to a patient having an implanted hearing aid that includes a hearing aid actuator;

utilizing the test device to measure a magnetic field generated by the hearing aid actuator responsive to an electrical signal passing through the hearing aid actuator;

employing the at least one magnetic field measurement to assess an interface between the actuator and a component of an auditory system of the patient; and

providing an electrical input to a positioning system, responsive to said assessment of said interface, to selectively position the hearing aid actuator relative to the component of the auditory system.

35. (New) The method of Claim 34, wherein the step of providing the electrical input comprises:

providing a wireless signal to the positioning system from a position external to the patient.

36. (New) The method of Claim 34, wherein the step of providing the electrical input comprises:

inductively coupling the electrical input to the positioning system.

37. (New) The method of Claim 21, wherein said test device includes said signal processing unit.